



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Big Bend Conservation Area

## Fiscal Year 2013 Annual Report



May 2017

# **Lower Colorado River Multi-Species Conservation Program Steering Committee Members**

## **Federal Participant Group**

Bureau of Reclamation  
U.S. Fish and Wildlife Service  
National Park Service  
Bureau of Land Management  
Bureau of Indian Affairs  
Western Area Power Administration

## **Arizona Participant Group**

Arizona Department of Water Resources  
Arizona Electric Power Cooperative, Inc.  
Arizona Game and Fish Department  
Arizona Power Authority  
Central Arizona Water Conservation District  
Cibola Valley Irrigation and Drainage District  
City of Bullhead City  
City of Lake Havasu City  
City of Mesa  
City of Somerton  
City of Yuma  
Electrical District No. 3, Pinal County, Arizona  
Golden Shores Water Conservation District  
Mohave County Water Authority  
Mohave Valley Irrigation and Drainage District  
Mohave Water Conservation District  
North Gila Valley Irrigation and Drainage District  
Town of Fredonia  
Town of Thatcher  
Town of Wickenburg  
Salt River Project Agricultural Improvement and Power District  
Unit "B" Irrigation and Drainage District  
Wellton-Mohawk Irrigation and Drainage District  
Yuma County Water Users' Association  
Yuma Irrigation District  
Yuma Mesa Irrigation and Drainage District

## **Other Interested Parties Participant Group**

QuadState Local Governments Authority  
Desert Wildlife Unlimited

## **California Participant Group**

California Department of Fish and Wildlife  
City of Needles  
Coachella Valley Water District  
Colorado River Board of California  
Bard Water District  
Imperial Irrigation District  
Los Angeles Department of Water and Power  
Palo Verde Irrigation District  
San Diego County Water Authority  
Southern California Edison Company  
Southern California Public Power Authority  
The Metropolitan Water District of Southern California

## **Nevada Participant Group**

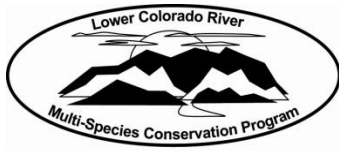
Colorado River Commission of Nevada  
Nevada Department of Wildlife  
Southern Nevada Water Authority  
Colorado River Commission Power Users  
Basic Water Company

## **Native American Participant Group**

Hualapai Tribe  
Colorado River Indian Tribes  
Chemehuevi Indian Tribe

## **Conservation Participant Group**

Ducks Unlimited  
Lower Colorado River RC&D Area, Inc.  
The Nature Conservancy



# **Lower Colorado River Multi-Species Conservation Program**

## **Big Bend Conservation Area**

## **Fiscal Year 2013 Annual Report**

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Lower Colorado River  
Multi-Species Conservation Program  
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# ACRONYMS AND ABBREVIATIONS

BBCA	Big Bend Conservation Area
FY	fiscal year
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
pH	the acidity or basicity (alkalinity) of an aqueous solution
PIT	passive integrated transponder
Reclamation	Bureau of Reclamation
SNWA	Southern Nevada Water Authority

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# 1.0 INTRODUCTION

The purpose of this annual report is to summarize all activities that have occurred at the Big Bend Conservation Area (BBCA) from October 1, 2012, through September 30, 2013, which is Federal fiscal year (FY) 2013, and projected activities for FY14. Water usage is presented for the calendar year, January 1, 2012, through December 31, 2013, consistent with water accounting reporting.

## 1.1 Background

The Bureau of Reclamation (Reclamation), State of Nevada, and the Southern Nevada Water Authority (SNWA) worked in partnership since 2005 to secure the Boy Scout Camp property and protect the adjacent backwater for inclusion into the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The Boy Scout Camp property purchased by the SNWA (15 acres of upland honey mesquite [*Prosopis glandulosa*] habitat) and the adjacent 15 acres of backwater within Reach 3 owned by the State of Nevada are collectively known as the BBCA.

The LCR MSCP has a conservation measure requiring the creation of 85 acres of flannelmouth sucker (*Catostomus latipinnis*) habitat within Reach 3 (Davis Dam to Parker Dam). In addition, the program also requires the creation of 360 acres of backwater for both the razorback sucker (*Xyrauchen texanus*) and bonytail (*Gila elegans*).

Flannelmouth suckers were reintroduced into the Colorado River below Davis Dam by the Arizona Game and Fish Department in 1976 by transfer of fish captured at the confluence of the Colorado and Paria Rivers at Lee's Ferry, Arizona. This stock has persisted for three decades and now represents the only known population of this native species in the Colorado River downstream from Grand Canyon.

# 2.0 CONSERVATION AREA SITE INFORMATION

## 2.1 Purpose

Backwater habitat maintained within the BBCA will be managed for the flannelmouth sucker, razorback sucker, and bonytail. The adjacent marsh habitat will be maintained for the western least bittern (*Ixobrychus exilis hesperis*) and Yuma clapper rail (*Rallus longirostris yumanensis* [also known as Ridgway's rail = *R. obsoletus yumanensis*]). The upland honey mesquite habitat will be maintained to provide foraging habitat for additional LCR MSCP covered species and to provide a venue for low-impact recreation.

## 2.2 Location

The BBKA is located in Nevada in Reach 3, in Laughlin, Nevada. It is within the historic flood plain of the lower Colorado River at River Mile 266 (figure 1).

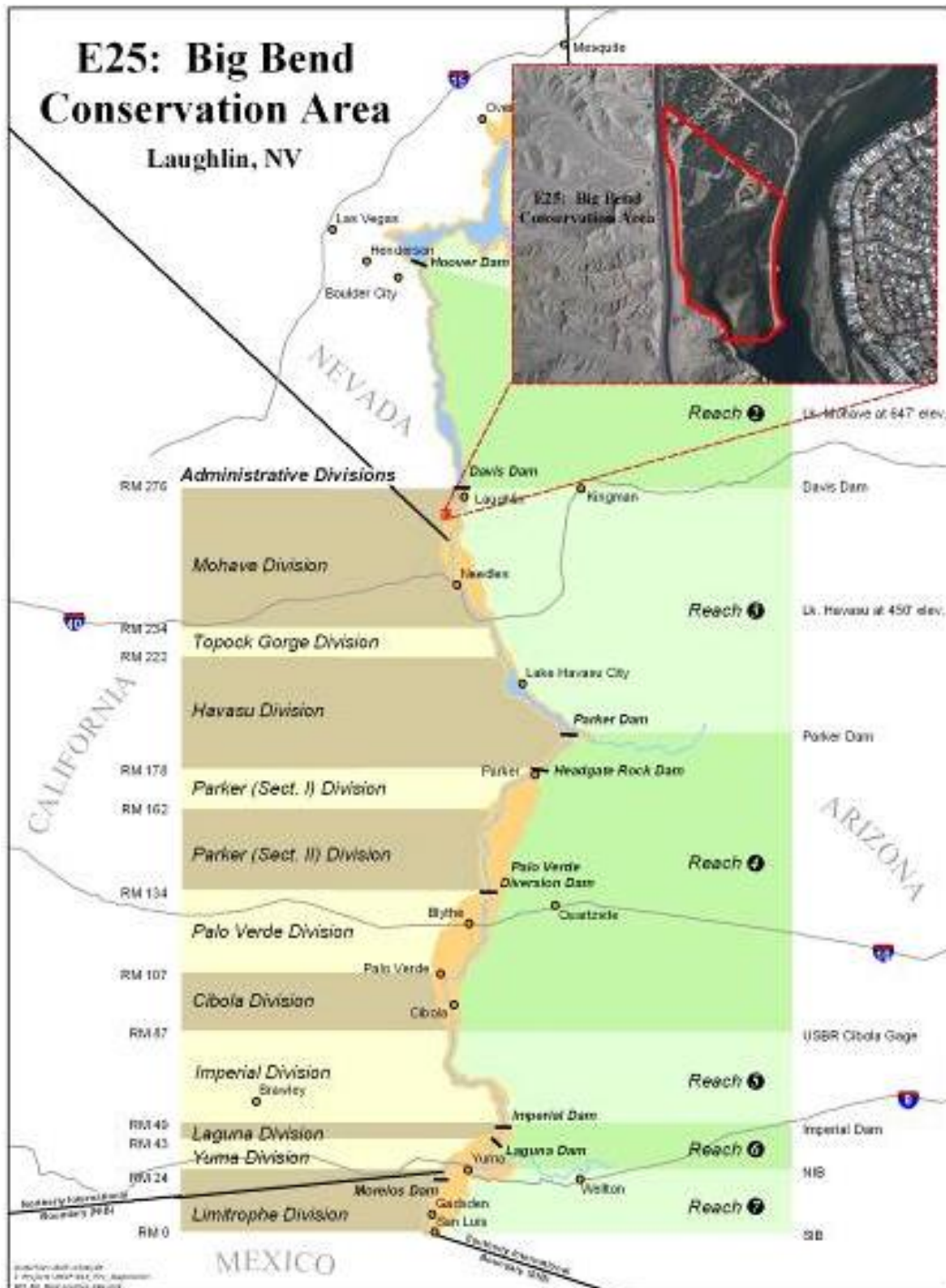


Figure 1.—LCR MSCP planning area with the BBKA.

## 2.3 Land Ownership

The 15 acres of backwater habitat is owned by the State of Nevada, and the 15 acres of upland honey mesquite is owned by the SNWA (figure 2).

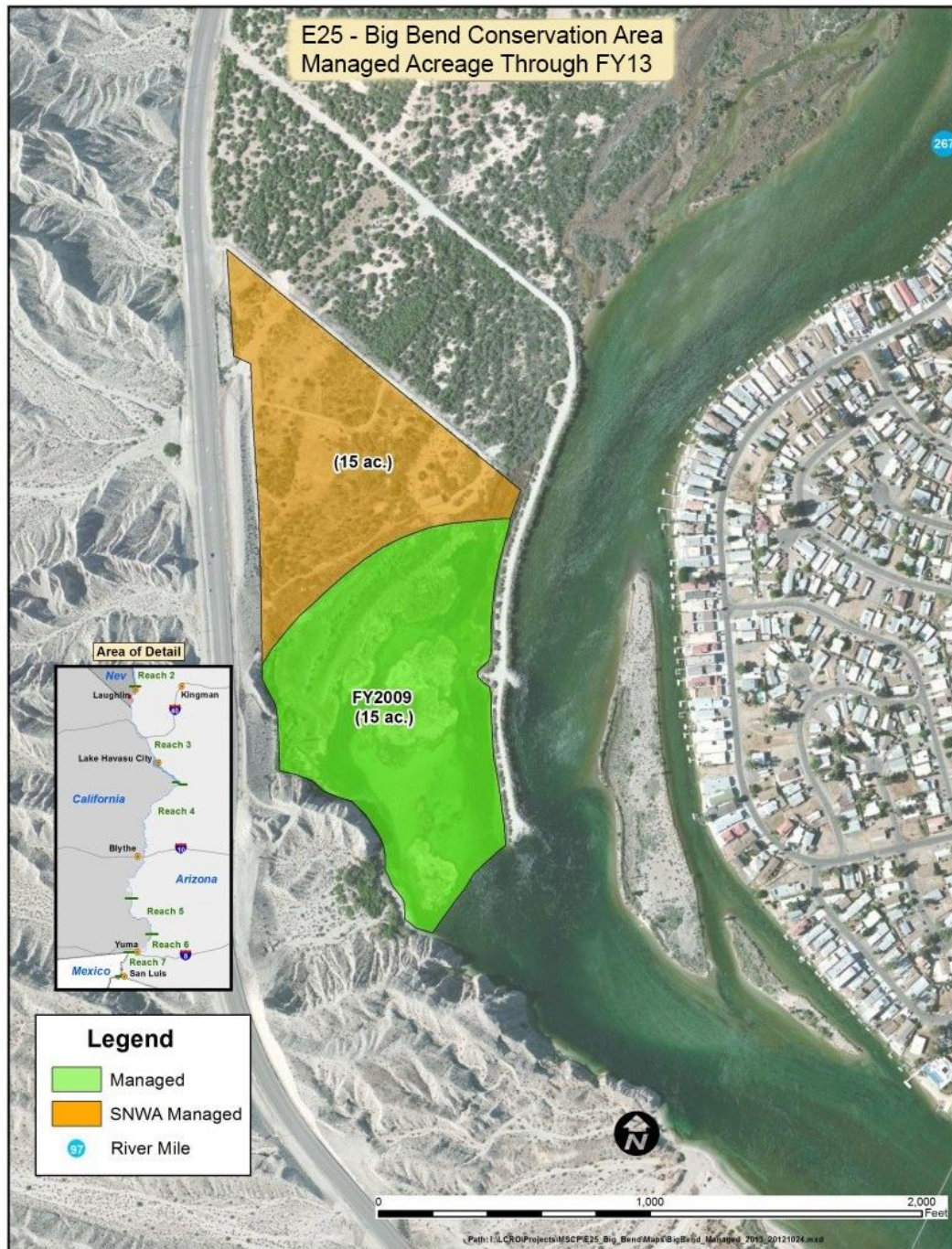


Figure 2.—BBCA managed acreage, FY13.

## **2.4 Water**

The SNWA has an entitlement to Colorado River water for use on 15 acres of honey mesquite upland for up to 10 acre-feet per year. However, the site utilizes less than 2 acre-feet per year for irrigation of the restored mesquite planting. It is envisioned that after 4 years of consecutive irrigation, no water will be required due to the revegetation area utilizing groundwater.

## **2.5 Agreements**

A Land Use Agreement was signed in 2008 by Reclamation, the SNWA, and the State of Nevada to secure land and water for the BBCA for the remainder of the 50-year LCR MSCP. The agreement outlines the rights and responsibilities of each partner in the project's development and maintenance.

## **2.6 Public Use**

The upland area consists of a low-impact recreational hiking trail and a wildlife viewing area. Interpretive signage is located at the gravel parking lot for visitors. Although the LCR MSCP does not have substantial involvement in the interpretive area, cooperation is necessary to ensure all activities conducted in the upland area are consistent with the program's goals and objectives.

The backwater area has been designated a no-wake zone. Coordination between the Nevada Department of Wildlife and the Nevada Wildlife Commission resulted in the installation of two buoys at the entrance to the backwater to designate the wakeless area. Installation of the buoys occurred after the Wildlife Commission in FY10 approved the BBCA backwater as a no-wake zone (Colorado River Regulation 382, Legislative Council Bureau File No. R004-10). The buoys restrict access to the backwater to only wake-less speed in order to decrease disturbance to the wildlife.

## **2.7 Law Enforcement**

The SNWA is responsible for law enforcement at the BBCA. A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy was finalized for the BBCA (Reclamation 2010). Reclamation continues to work with the SNWA and local officials to ensure law enforcement activities do not conflict with the LCR MSCP Habitat Conservation Plan.

## **2.8 Wildfire Management**

A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy has been finalized for the BBCCA (Reclamation 2010). The LCR MSCP will continue to work with local State and Federal fire agencies to reduce the risk of wildland fires and maintain clear lines of communication among agencies.

## **3.0 HABITAT DEVELOPMENT AND MANAGEMENT**

There were no new plantings at the BBCCA during FY13. A youth conservation crew was brought in to conduct trail and habitat maintenance activities. Saltcedar (*Tamarix* spp.) was cut out and mulched onsite. The mulched material was spread on trails for dust and erosion control. The upland mesquite habitat was irrigated throughout the growing season, allowing the newly planted mesquite trees to reach the groundwater. The backwater is maintained by the daily rise and fall of the Colorado River's operation.

### **3.1 Irrigation**

In August 2012, the groundwater well onsite that supplies irrigation water failed. A diagnostic report showed that the electric motor powering the pump was at fault and that a replacement motor would be required. In September 2012, a temporary gasoline pump was brought in to determine if the existing well, irrigation manifold, and filters would be functional using the temporary pump. It was discovered that a portable pump would supply adequate water for the irrigation system and that a new electric pump would not be necessary.

### **3.2 Site Maintenance**

Maintenance activities for the upland mesquite area consist of invasive vegetation removal, road repair, garage upkeep, and irrigation system repair. The maintenance garage was constructed by the Boy Scouts and is a well-built structure providing the only dry storage onsite. The aboveground irrigation system provides water to individual plants through emitters and a series of connecting tubing. Salts and sediment can clog the emitters, and they must be replaced frequently. The connecting lines are also prone to rabbit damage, and when damaged, they must be repaired.

## **4.0 Monitoring**

### **4.1 Backwater Monitoring**

Backwater monitoring for the BBCA is accomplished during seasonal fish and water quality monitoring events. The objective of the monitoring is to assess and document native fish use within the conservation area. The data being collected will be used to evaluate trends over time in an effort to inform future management of the BBCA.

#### **4.1.1 Native Fishes**

Fish monitoring occurred 2 nights per month in December and 2 nights per month in February – May. Monitoring trips included the use of multiple survey methods and gear types in an attempt to contact the various life stages of native fish species. Each monitoring trip included trammel netting, remote passive integrated transponder (PIT) scanning, and larval surveys. Due to daily fluctuations in river stage, locations were selected based on the water levels and historical contacts of native fishes in the backwater. Due to repeated ineffectiveness in previous years, electrofishing was not conducted and will be discontinued in future years.

During FY13, 22 razorback suckers and 1 flannemouth sucker were captured in trammel nets. Eighteen of the razorback suckers had known stocking histories; 15 of these were from a recent stocking event on January 31, 2013, conducted directly north of the BBCA at the adjacent Big Bend State Park, and 3 were released upstream the previous year (March 23, 2012) at Laughlin Lagoon. The flannemouth sucker captured was a sonic-telemetered fish associated with work being conducted under LCR MSCP Work Task C53 (Sonic Telemetry of Juvenile Flannemouth Suckers in Reach 3). This fish displayed limited residency in the backwater and was detected repeatedly for 10 days until its time of capture in the May trammel net survey. Trammel netting bycatch was comprised of the standard suite of non-natives.

Remote PIT scanning is only capable of detecting fish with a 134-kilohertz PIT tag. All hatchery-reared razorback suckers and bonytail are marked with this tag prior to release. The flannemouth suckers in Reach 3 are wild, with only a small subset of the population marked with this type of tag. In FY13, nine razorback suckers were contacted through remote PIT scanning: seven were from the Big Bend State Park release in January 2013, one was from the Laughlin Lagoon release the previous year, and one was from a Park Moabi release in 2011.

Larval sampling was timed to coincide with the razorback sucker spawning period (February – March) and the flannemouth sucker spawning period (April – May). Seven razorback sucker larvae were captured this year: one in February and six in March. These are the first larval razorback suckers contacted within the BBCA. Thirteen larval flannemouth suckers were captured in FY13; this number was similar to past years.

#### 4.1.2 Water Quality

Water quality monitoring was completed during each of the fish monitoring trips, with additional readings taken during the summer months (figures 3–6). A single vertical profile was measured at 0.5-meter intervals in the deepest portion of the backwater using a multi-parameter probe. In general, water quality is of minimal concern at the BBCA due its substantial hydrological connection to the Colorado River.

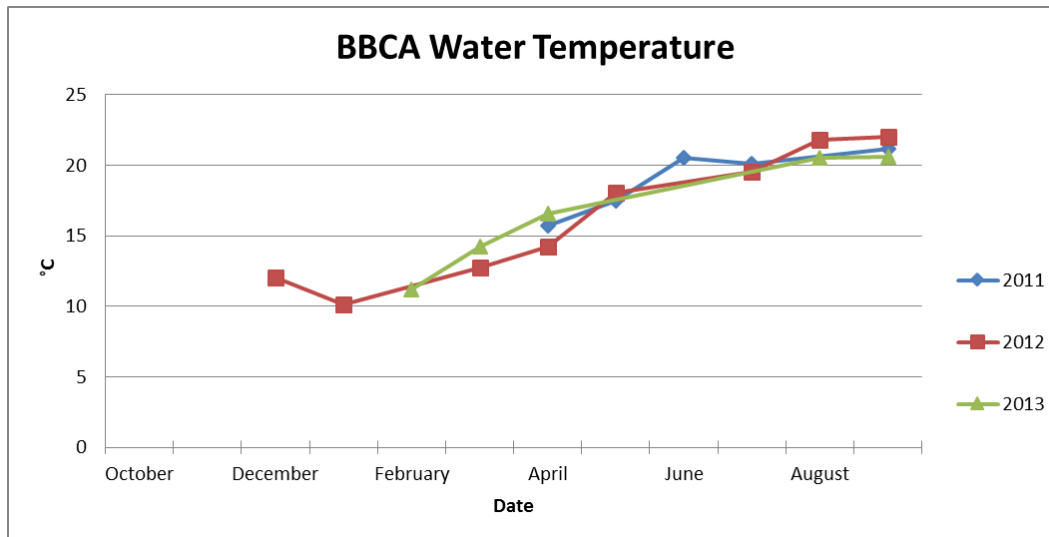
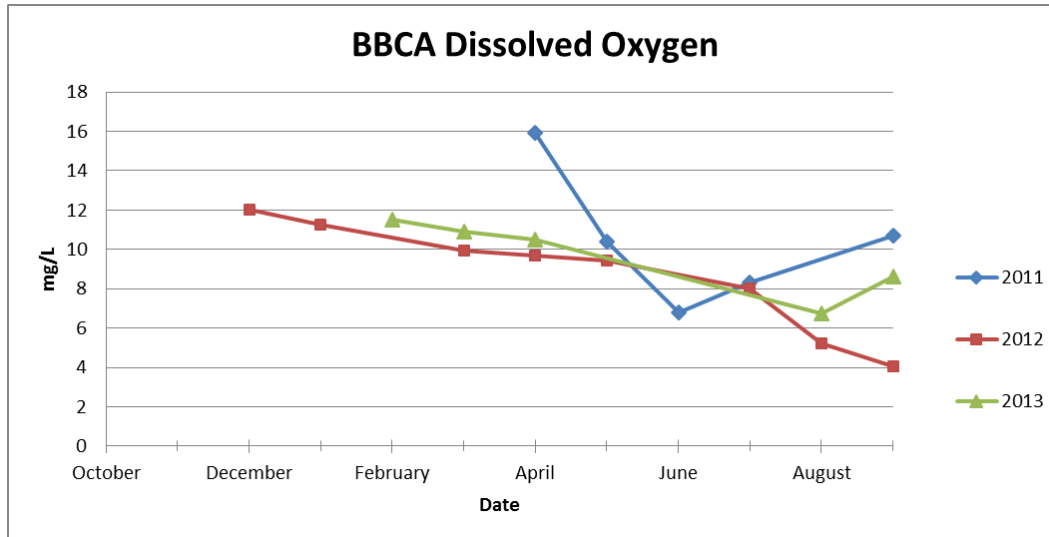
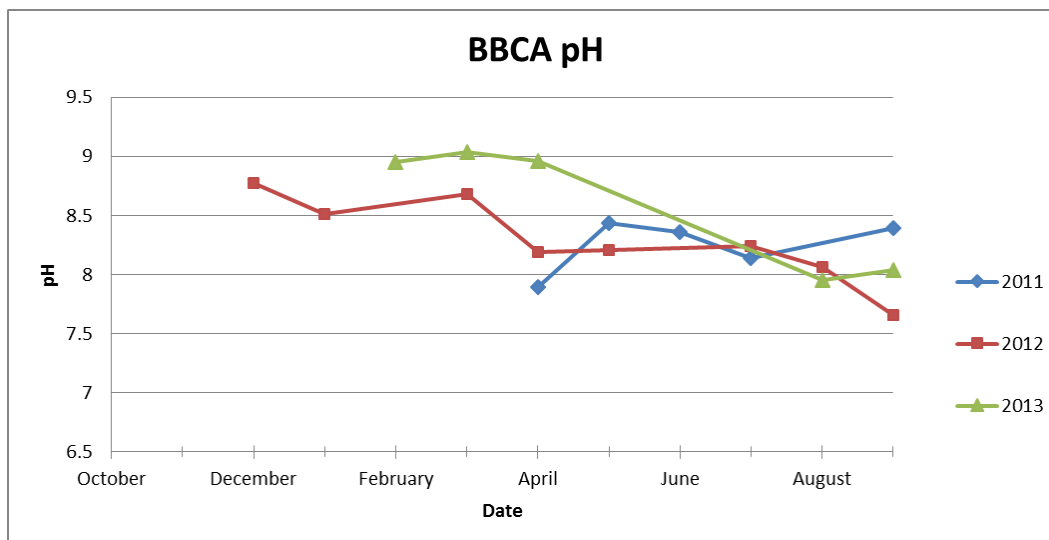


Figure 3.—BBCA water temperature, 2011–13.

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**Figure 4.—BBCA dissolved oxygen, 2011–13.**



**Figure 5.—BBCA pH, 2011–13.**

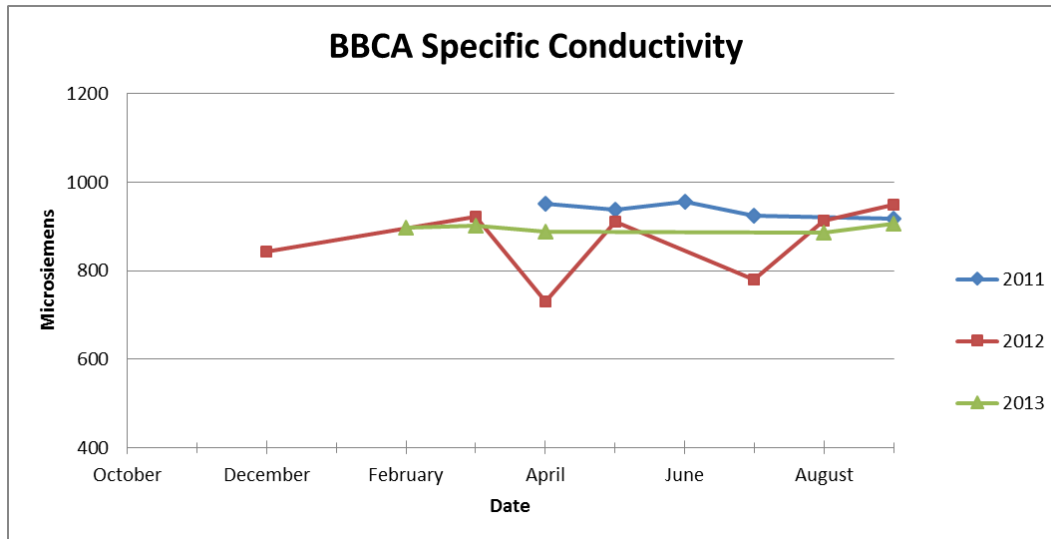


Figure 6.—BBCA specific conductivity, 2011–13.

#### 4.1.3 Phytoplankton and Zooplankton

Phytoplankton and zooplankton monitoring were conducted quarterly throughout the year, and all samples were taken from a single location at the deepest portion of the backwater. Samples were collected from the entire water column using standardized vertical sampling methods. Both phytoplankton and zooplankton biovolume and biomass are similar to that of the Colorado River (figures 7 and 8). This is due to the continuous exchange of water that is characteristic for this site. Subsequently, all plankton sampling will be discontinued in the future.

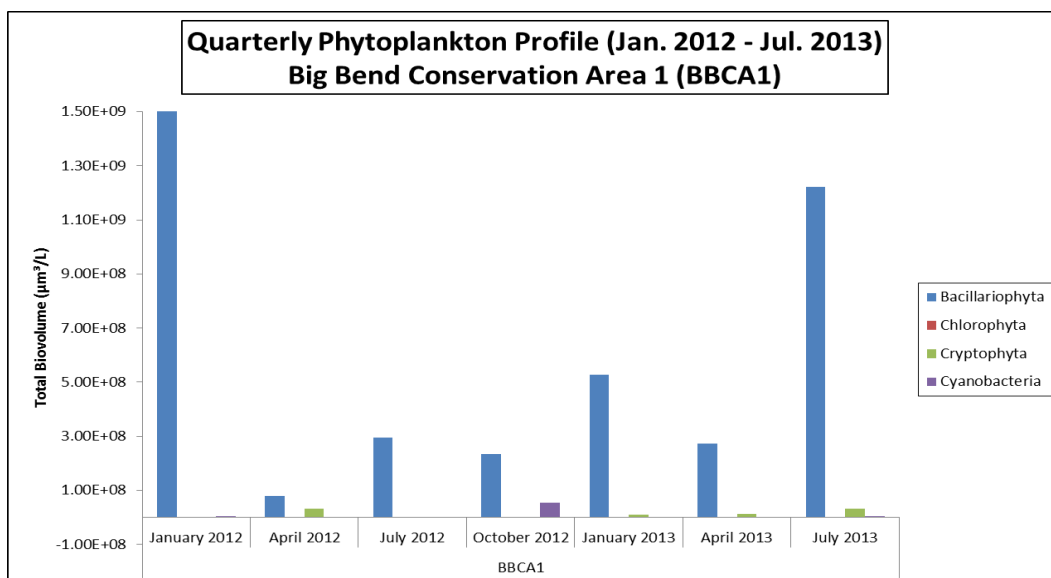


Figure 7.—BBCA, January 2012 – July 2013 average phytoplankton biovolume profile.

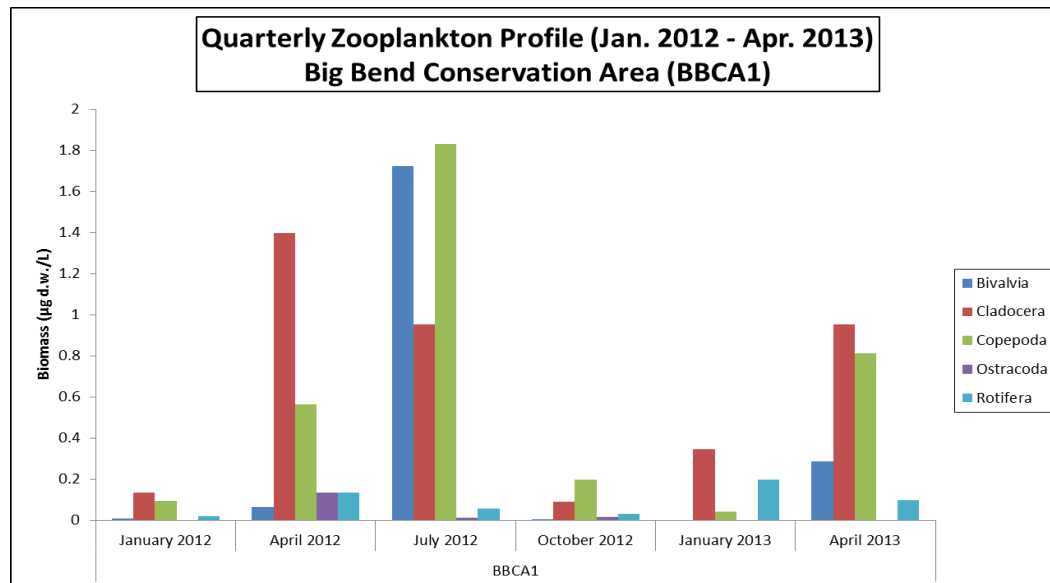


Figure 8.—BBCA, January 2012 – July 2013 average zooplankton biomass profile.

## 4.2 Avian Monitoring

### 4.2.1 Marsh Bird Surveys

Three marsh bird surveys were conducted at the BBCA between March 15 and May 31, 2013. Four survey points were surveyed. Call-playback surveys for the California black rail (*Laterallus jamaicensis coturniculus*), western least bittern, Virginia rail (*R. limicola*), and Yuma clapper rail were performed using a standardized protocol from the National Marsh Bird Monitoring Program (Conway 2008; U.S. Fish and Wildlife Service 2003, 2006). No LCR MSCP covered species were detected (Kahl 2015).

## 4.3 Small Mammal Monitoring

### 4.3.1 Rodent Monitoring

Live trapping was conducted in the fall and spring of FY13 to determine the presence of the Colorado River cotton rat (*Sigmodon arizonae plenus*) and desert pocket mouse (*Chaetodipus penicillatus sobrinus*). One hundred ten traps were set in transects in fall, and 29 traps were set in transects in spring. Three Colorado River cotton rats were captured in fall, and two were captured in spring. Forty-eight desert pocket mice were captured in fall, and four were captured in spring (Hill and Calvert 2016).

## 5.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT

The process for habitat creation conservation measure accomplishment was finalized in October 2011 (Reclamation 2011). The BBCA was brought into the LCR MSCP to benefit the flannemouth sucker (FLSU1), razorback sucker (RASU2), and bonytail (BONY2), including other covered species.

In 2013, no additional acres of backwaters were creditable due to the site reaching maturity.

Table 1.—Species-specific habitat creation conservation measure creditable total acres, 2013

Species-specific habitat creation conservation measure	FLSU1	RASU2	BONY2
Creditable acres in 2013	0	0	0
<b>Total (including previous years)</b>	<b>15</b>	<b>15</b>	<b>15</b>

## 6.0 ADAPTIVE MANAGEMENT

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (Reclamation 2007). Under the Adaptive Management Program, conservation areas will be assessed for biological effectiveness and whether they fulfill the conservation measures outlined in the Habitat Conservation Plan for 26 covered species and if they potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage conservation areas after initial implementation. Once monitoring data are collected over a few years, and then analyzed for the BBCA, recommendations may be made through the adaptive management process for site improvements in the future. Currently, there are no adaptive management recommendations for the BBCA.

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